ATION TREATY (PCT) ATION PUBLISHED UNDER THE PATENT COO.

(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 17 June 2004 (17.06.2004)

PCT

(10) International Publication Number WO 2004/051465 A3

(51) International Patent Classification7: G06F 9/38, 9/302

(21) International Application Number:

PCT/IB2003/005436

(22) International Filing Date:

25 November 2003 (25.11.2003)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 102 56 586.4

4 December 2002 (04.12.2002) DE

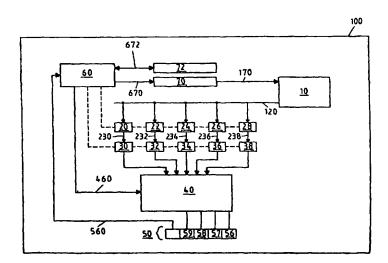
- (71) Applicant (for DE only): PHILIPS INTELLECTUAL PROPERTY & STANDARDS GMBH [DE/DE]; Steindamm 94, 20099 Hamburg (DE).
- (71) Applicant (for AE, AG, AL, AM, AT, AU, AZ, BA, BB, BE, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CY, CZ, DK, DM, DZ, EC, EE, EG, ES, FI, FR, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, SZ, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW only): KONINKLIJKE

PHILIPS ELECTRONICS N.V. [NL/NL]; Groenewoudseweg 1, NL-5621 BA Eindhoven (NL).

- (72) Inventors; and
- (75) Inventors/Applicants (for US only): BEHLING, Thomas [DE/DE]; c/o Philips Intellectual Property & Standards GmbH, Weisshausstr. 2, 52066 Aachen (DE). MALZAHN, Ralf [DE/DE]; c/o Philips Intellectual Property & Standards GmbH, Weisshausstr. 2, 52066 Aachen (DE).
- (74) Agent: VOLMER, Georg; Philips Intellectual Property & Standards GmbH, Weisshausstr. 2, 52066 Aachen (DE).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),

[Continued on next page]

(54) Title: DATA PROCESSING DEVICE WITH MICROPROCESSOR AND WITH ADDITIONAL ARITHMETIC UNIT AND ASSOCIATED METHOD



(57) Abstract: In order to further develop a data processing device (100; 100') having at least one microprocessor (90) and having at least one additional arithmetic unit (40) as well as a method of performing at least one particular defined calculation by means of the data processing device (100; 100) in such a way that a plurality of calculations may be performed in sequence without any intervention by the microprocessor (90), it is proposed that the registers be loadable from at least one in particular peripheral memory (10), for example from at least one R[andom]A[ccess]M[emory], from at least one R[ead]O[nly]M[emory] or from at least one E[lectrically] E[rasable] P[rogrammable] R[ead]O[nly]M[emory.



Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- with international search report
- (88) Date of publication of the international search report: 7 April 2005

INTERNATIONAL SEARCH REPORT

Pecia PCT/PTO 03 JUN 2005

A CLASSIF IPC 7	GO6F9/38							
• 	Internal Debut Classification (IDC) or to both notional algorithms	on and IDC						
According to International Patent Classification (IPC) or to both national classification and IPC								
B. FIELDS SEARCHED								
Minimum documentation searched (classification system followed by classification symbols) I PC 7 G06F								
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched								
Electronic data base consulted during the international search (name of data base and, where practical, search terms used)								
EPO-Internal								
C. DOCUMENTS CONSIDERED TO BE RELEVANT								
Category °	Citation of document, with indication, where appropriate, of the relevant	ant passages	Relevant to claim No.					
Х	WO 97/34226 A (MITEL CORP) 18 September 1997 (1997-09-18) page 5, line 1 - line 4; figure 1		1,2					
А	page 11, line 3 - page 12, line 20 figures 4,6	6						
Α	WO 98/12630 A (ELECTRONICS FOR IMINC) 26 March 1998 (1998-03-26) the whole document	1,3,4						
А	EP 0 822 482 A (PHILIPS PATENTVER PHILIPS ELECTRONICS NV (NL)) 4 February 1998 (1998-02-04) the whole document	1,2						
	hands are listed in the continuation of how C	Y Patent family members are listed i	n annex					
Further documents are listed in the continuation of box C. Patent family members are listed in annex.								
"Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document published after the international illing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "E" earlier document op bilished after the international invention invention "X" document of particular relevance; the claimed invention cannot be considered to								
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the International filing date but								
later t	than the priority date claimed	*&* document member of the same patent						
	actual completion of the international search 13 October 2004	Date of mailing of the international sea	of the International search report 2 1 01. 2005					
	mailing address of the ISA	Authorized officer						
European Patent Office, P.B. 5818 Patentiaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016		Moraiti, M						

INTERNATIONAL SEARCH REPORT

Patent document cited in search report		Publication date		Pate nt family member(s)		Publication date
WO 9734226	A	18-09-1997	US CA WO DE DE EP	5960209 / 2248711 / 9734226 / 69719221	A1 A1 D1 T2	28-09-1999 18-09-1997 18-09-1997 27-03-2003 18-12-2003 02-02-2000
WO 9812630	A	26-03-1998	US AU AU BR CA EP JP NZ WO	9711505 / 2265694 / 1012706 /	B2 A A1 A1 T	10-11-1998 23-12-1999 14-04-1998 18-01-2000 26-03-1998 28-06-2000 13-02-2001 29-09-2000 26-03-1998
EP 0822482	A	04-02-1998	DE DE EP JP US	19630861 / 59710434 0822482 / 10091593 / 5889622 /	D1 A2 A	05-02-1998 21-08-2003 04-02-1998 10-04-1998 30-03-1999

Box I Observations where certain claims were found unsearchable (Continuation of Item 1 of first sheet)
This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:
1. Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
2. Claims Nos.: because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3. Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).
Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)
This International Searching Authority found multiple inventions in this international application, as follows:
see additional sheet
As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. X No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.: 1-9
Remark on Protest The add itional search fees were accompanied by the applicant's protest. No protest accompanied the payment of additional search fees.



FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-9

Receiving data from a peripheral memory

2. claim: 10

Method of performing a calculation